

Applicant : Imad Mahawili, Ph.D
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13. (Amended)

AB The reactor according to Claim [11] 12, wherein said supply tube has a larger diameter than said generator tube such that the gas undergoes dissociation and ionization within said supply tube.

15. (Amended)

AC The reactor according to Claim 1, wherein said gas injection assembly includes at [said] least two gas injection tubes, one of said gas injection tubes injecting a first gas in said processing chamber, and a second of said gas injection tubes injecting a second gas in said processing chamber, and said gas injection assembly ionizing at least one of said first and second gases into a gas plasma for injecting into said processing chamber.

18. (Amended)

AS The reactor according to Claim 17, further comprising a supply tube in communication with said gas injector [injection tube], said generator tube directing the gas into the supply tube.

32. (Amended)

AC A method of processing a semiconductor substrate comprising [the steps of]: providing a processing chamber; supporting the substrate in the processing chamber; ionizing a gas; and injecting the ionized gas into the processing chamber onto the substrate for processing the semiconductor substrate.

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36. (Amended)

AD
The method of processing a semiconductor substrate according to Claim 34,
further comprising isolating said electromagnetic field [form] from the substrate.

Please add the following new claims:

55. (New)

Sub (D)
The reactor according to Claim 53, wherein said heater housing is adapted for
supporting the substrate in said processing chamber.

56. (New)

AS
The reactor according to Claim 55, wherein said heater housing is adapted for
rotatably supporting the substrate in said processing chamber.

57. (New)

A reactor for processing a semiconductor substrate, said reactor comprising:
a reactor housing defining a processing chamber and having a substrate
support for supporting a substrate in said processing chamber; and
a gas injection system including an electromagnetic field generator generating
an electromagnetic field exteriorly of said processing chamber and for injecting at least one
gas into said processing chamber, said gas injection system passing said at least one gas
through said electromagnetic field generated by said electromagnetic field generator wherein
said gas is ionized exteriorly of said processing chamber, said gas injection system injecting
said ionized gas into said processing chamber and onto the substrate supported therein for
processing the substrate.

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58. (New)

subj
The reactor according to Claim 57, wherein said magnetic field generator comprises a plasma generator.

59. (New)

The reactor according to Claim 57, wherein said gas injection system includes a gas manifold, said substrate support being adapted to rotate said substrate in said processing chamber whereby said gas manifold distributes the ionized gas uniformly over the substrate.

60. (New)

AS
cont
The reactor according to Claim 59, wherein said gas injection system includes an injection tube having a plurality of orifices through which the ionized gas is delivered in said processing chamber.

61. (New)

The reactor according to Claim 60, wherein said gas injection system further includes a supply tube in communication with said injection tube, said supply tube for delivering the ionized gas to said injection tube.

62. (New)

subj
The reactor according to Claim 61, wherein said magnetic field generator includes a generator tube in communication with said supply tube, said electromagnetic field generator generating said electromagnetic field in said generator tube to ionize gas flowing into said supply tube into a gas plasma.

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63. (New)

S 1/2
The reactor according to Claim 61, wherein said supply tube has a larger diameter than said generator tube such that the gas undergoes dissociation within said supply tube.

64. (New)

A reactor for processing a semiconductor substrate, said reactor comprising:
a reactor housing defining a processing chamber and having a substrate support for supporting a substrate in said processing chamber;
means for ionizing at least one gas into a gas plasma; and
means for injecting the ionized gas into said processing chamber and onto the substrate supported therein for processing the substrate.

65. (New)

AP
cont
The reactor according to Claim 64, further comprising a heater for heating the substrate in said processing chamber.

66. (New)

The reactor according to Claim 65, wherein said heater selectively heats the substrate in said processing chamber.

67. (New)

The reactor according to Claim 64, wherein said means for ionizing a gas includes means for generating an electromagnetic field.

68. (New)

The reactor according to Claim 67, wherein said means for ionizing the gas is located exteriorly of said processing chamber.